PRODUCT DESCRIPTION

The electronically temperature controlled soldering station was developed to meet the present and future needs of the electronic production industry. The many features of the Xytronic product make it the ideal tool for both service and repair as well as production line soldering operations.

Tip temperature is maintained to within ±3°C (±6°F) of any setting from 150-450°C (300-850°F) by an electronic circuit which has a temperature sensor located at the end of the heating element. The variable temperature design means no tip or the heating element changes are necessary to adjust temperatures.

Analog stations include a linear-scale meter which indicates the current tip temperature. LEDs indicator lights are used to signal Power "On" (Green) and Heater "On" (Red).

Digital stations include a 14.2 mm (.560") three digit LED display to accurately indicate the current tip temperature directly with a tolerance of ±1°C (1°F), and one red 5mm LED to indicate heater "ON".

Non-Display stations include a multi-color LED to indicated power "On" (Green) or Heater "On" (Red).

This soldering station incorporated a temperature lock to prevent unwanted temperature adjustments by the operator. Lock in the selected temperature by an allen head screw located on the front panel. An allen key for this purpose is included.

A new feature for the 136, 136ESD, & 137ESD is a calibration port located on the face of the unit that allows for quick and convenient fine tuning of the electronic temperature control system.

The detachable soldering iron is connected to the base unit by a fire-resistant silicone rubber cable fitted with a heavy duty, 5 or 6 pin plug and a steel locking ring. All housings are molded of tough, heat resistant PC resin to better withstand high impact bumps and abrasions. All materials used comply with DOD, CE, and MIL Specs.

Caution: The heating element for soldering iron assembly (SIA60), is made of wound nichrome with a "K" type thermocouple sensor and comes standard on Xytronic Model numbers 168-3C, XY9-60A, XY9-60D, XY9-60A/ESD, & XY9-60D/ESD. Our newest ergonomic mini handle irons (P/N#107, 107ESD) incorporate a long life Japanese made ceramic heater with PTC sensor and is standard equipment on Xytronic model numbers 136, 136ESD & 137ESD. The two types of iron assemblies are incompatible and use of the wrong type of iron can lead to premature heating element failure. The 5 pin configuration of the SIA60 can be easily distinguished from the 6 pin connector of the 107 (107ESD) iron. Please refer to Figures 1 & 2.

The power unit is isolated form the AC line by a high efficiency 24VAC output transformer for user safety and to prevent unwanted high voltage leakage that may damage current sensitive components. Zero-voltage switching circuit is incorporated to protect the C-MOS IC from damage by transient voltage spikes.

Fig. 1 SOLDERING IRON ASSEMBLY SIA60

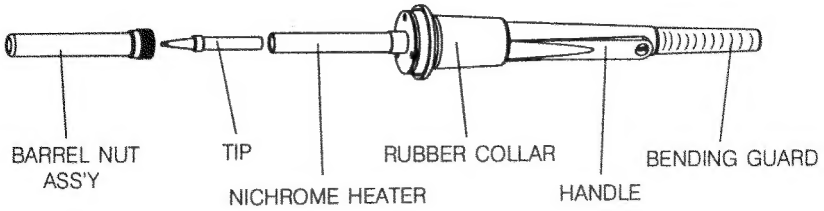
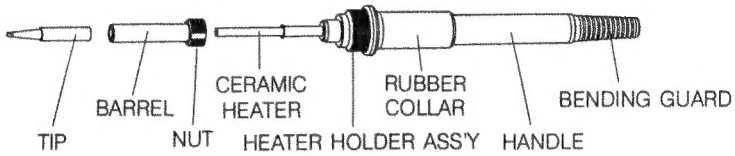


Fig. 2 SOLDERING IRON ASS'Y 107/107 ESD



WORKING TEMPERATURE

A low temperature will slow the rate of flow of the solder. A high temperature will burn the flux in the solder, which in turn will emit a heavy white smoke resulting in a dry joint or damage to the p.c.b.

When the iron is set to the correct temperature for the particular soldering situation at hand, a good joint is assured. Key to successful soldering is knowing the type of solder you are using, the size of the joint to be soldered and the characteristic of the p.c.b. & component used and adjusting the tip temperature to meet the needs of the application.

The most common solder alloy used in the electronic industry is 60% tin, 40% lead (60/40). The tip working temperature of the solder is detailed below and can vary from manufacturer to manufacturer.

Below are listed the common temperature for the specific job.

SOLDERING		
Melting point	215°C	(419°F)
Normal operation	270-320°C	(518-608°F)
Production line operation	320-380°C	(608-716°F)
DESOLDERING		
Desoldering operation for smaller joint	320-360°C	(608-680°F)
Desoldering operation for larger joint	370-400°C	(698-752°F)

* The temperature above 410°C (770°F) is not recommended for normal soldering functions, but can be used for short periods of time when high temperatures are required.

OPERATING INSTURCTIONS

* Ensure that the working voltage matches your power supply before plugging in the station.
* Check carefully for any damage during transportation.

Analog Stations – linear analog meter, Model: 168-3C, XY9-60A, & XY9-60A/ESD.
Set temperature by rotating temperature control knob on the front of the front panel stopping at the desired temperature.

Digital Stations – digital display, Model: XY9-60D, & XY9-60D/ESD & 137ESD.
Set temperature by moving "SET-READ" switch to "SET" position, rotate temperature control knob until the digital display reads the desired temperature, then move "SET-READ" switch to "READ" position. The station will then maintain the pre-set temperature.

No Digital Stations – Model: 136, 136ESD
Set temperature by rotating temperature control knob on the front of the front panel.

First Time Use:
1. Ensure that the base unit's power switch is in the "OFF" position.
2. Set the temperature control knob to the MIN setting.
3. Switch the base unit power switch to the "ON" position. Note that the LED light will turn off when the tool reaches the set temperature. Models 136 & 136ESD use a multi-color LED to indicate that the iron has reached the desired temperature by changing from green to orange in color.
4. Rotate the temperature control knob to 250°C (480°F), waiting until the LED turns off to begin liberally tinning the soldering tip with a protective layer of solder.
5. Adjust the temperature to the desired setting. When the LED turns off (or changes color) you are ready to begin.

CAUTION: Soldering irons operate at high temperatures and can easily burn people or objects. **Do not touch** the tip and heater at any time while the unit is on and keep it a safe distance from inflammable materials. Please allow sufficient time for it to cool before changing tips or servicing the unit!

COMMON CAUSES OF TIP UNWETTING

1. Tip temperature higher than 410°C (770°F).
2. The tip working surfaces are not tinned while the iron idling.
3. Lack of flux in soldering, wicking, repairing, and touch-up operations.
4. Wiping the tip on a high sulfur content, dirty or dry sponges and rags.
5. Touching with organic substances such as plastic, resin, silicone, grease and other chemicals.
6. Impurities in solder and/or low tin content.

CARE OF TIPS

Caution: The solder iron can reach very high temperatures. Be sure to turn the unit off prior to carrying out any maintenance or trouble shooting steps listed below!

IMPORTANT
Remove the tip and clean after moderate to heavy use or at least daily if on the production line. Remove any loose build up in the tip retaining assembly to prevent tip freezing.

The solder tips supplied are iron clad copper and if used properly, they should maintain optimum life.

1. Always tin the tip before returning it to the holder, turning off the station, or storing it for long periods of time. Wipe the tip on a wet sponge prior to use.
2. Keeping the iron set at high temperatures (more than 400°C or 750°F) will shorten tip life.
3. Do not use excessive pressure on the tip or rub the joint with the tip while soldering, it does not improve the heat transfer and may damage the tip.
4. Apply solder to the joint, not the tip when soldering. The flux is naturally caustic and thus will eat away the tip.
5. Never clean the tip with a file or abrasive materials.
6. Do not use fluxes which contain chloride or acid. Use only rosin or resin activated fluxes.
7. If an oxide film forms on the tip, it can be removed by careful buffing with a 600-800 grit emery cloth, isopropyl alcohol or equivalent and then wrapping rosin core solder around the newly exposed surfaces. Coat the tinned areas with rosin-core solder after the resin-core has melted.

NEW TIPS

Following these steps will lead to optimum tip life.
1. Set temperature to min. then turn the main power switch to the "ON" position.
2. Set temperature to 250°C (482°F).
3. Coat the tinned surfaces with rosin-core solder after reaching 250°C (482°F).
4. Set to desired temperature after allowing the unit to idle at 250°C for 3 minutes.
5. The iron will be ready for use once it reaches the preset temperature.

IMPORTANT: Remove and clean the tip daily. If a new tip is installed, remove any loose build up in the barrel assembly, otherwise the tip may fuse to the heating element or retaining barrel.

MAINTENANCE

TIP MAINTENANCE AND DRESSING
Tips can be changed or replaced simply by unscrewing the knurled nut barrel assembly.

The station must be switched off and allowed to cool before this operation as damage may result if the system is left on without the tip in place!
After removing the tip, blow out any oxide dust that may have formed in the tip retaining area of the barrel. Be careful to avoid getting this dust in your eyes. Replace the tip and screw back the knurled nut barrel assembly using only firm hand pressure to tighten. Pliers should only be used to tighten the nut to avoid burning your fingers, but care should be taken not to over-tightern as this could damage the element.

GENERAL CLEANING

The outer cover of the iron and station may be cleaned with a damp cloth using small amounts of liquid detergent. Never submerse the unit in liquid or allow any liquid to enter the case of the station. Never use any solvent to clean the case.

SERVICE

If the iron or station should become faulty or, for some reason not operate normally, the system should be returned to the service department of your authorized dealer or agent.

WARNING: Keep out of the reach of children.

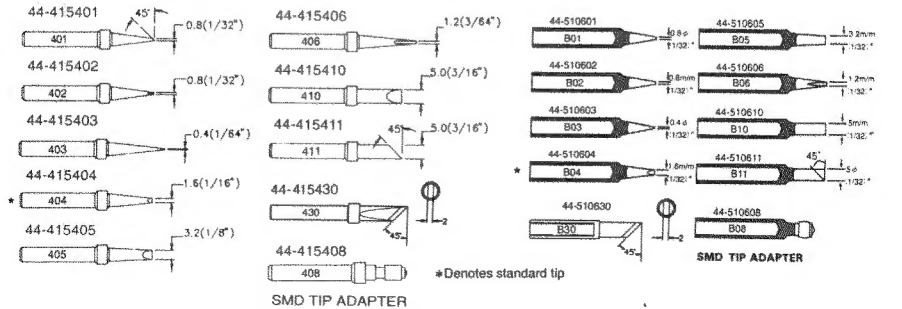
WARNING: Do not inhale solder fumes.

WARNING: Keep tip and heating element away from the body, clothes and flammable material when in operation.

INTERCHANGEABLE TIPS

For Nichrome Heater - SIA60
For Stations: XY9-60D, XY9-60D/ESD, XY9-60A, XY9-60A/ESD, 168-3C, 200GX, 258 , 268

For Ceramic Heater - 107, 107ESD
For Stations: 136, 136ESD, 137ESD



*Denotes standard tip